

Work Order ID 153109

153109

Page 1

Tuesday, November 08, 2016 10:52:31 AM

Item ID: D4434-5 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Bracket
 Start Date: 11/15/2016 Start Qty: 4.00 ***4*** Cust Item ID:
 Required Date: 11/18/2016 Req'd Qty: 4.00 ***4*** Customer:
 Reference:

Approvals: Process Plan: **DAS 21 9-89** Date: **NOV 09 2016** Tooling: Date: Run Start ***NR1***
 QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr								
D4434	C							DAS 46 9-89	16/11/17

100	FLOW WATER JET	0.01							
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100

Waterjet

FLOW CNC Waterjet

Memo

1-Cut D4434-5 as per Dwg

Dwg Rev: **C**

Prog Rev: **C**

2-Deburr if necessary

110	QC2- Inspect parts off machine FAI/FAIB	0.00							
-----	---	------	--	--	--	--	--	--	--

110

QC

Quality Control

Memo

0.01

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval 	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Work Order ID 153109***153109***

Page 2

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Revision ID: Stop ***NS2***
Item Name: Bracket
Start Date: 11/15/2016 Start Qty: 4.00 ***4*** Cust Item ID:
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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC8- Inspect parts - second check Memo	0.00 0.01				4			DAS 38 9-89 NOV 18 2016
130 *130* Brake NC Brake NC	Bend as per dwg Memo	0.02 0.09			DAS 30 9-89	4			JAN 17 2017
150 *150* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.01				4			DAS 38 9-89 JAN 17 2017

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
30 08 5-8-2				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
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Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
3A- 0E -R-6				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks 3A- ☐ Crimp/Kink/Ripple/Wave 0E ☐ Cuffs -R-6 ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER :					

Tuesday, November 08, 2016 10:52:31 AM

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9-89 JAN 23 2017

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WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

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Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval 	
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	

Root Cause				FAULT CATEGORY			
Environment ☐	☐	No Re-verification ☐	☐	Pressure/Forced ☐	☐	Temperature/Cure ☐	☐
Design ☐	☐	Operator ☐	☐	Bending ☐	☐	Set-up ☐	☐
Doc/Data ☐	☐	Offset/Setup ☐	☐	Centre Not Concentric ☐	☐	BOM/Route ☐	☐
Equip/Tooling ☐	☐	Supplier ☐	☐	Cracks ☐	☐	Broken/Damage/Defect ☐	☐
Handling/Pre ☐	☐	Training ☐	☐	Crimp/Kink/Ripple/Wave ☐	☐	Inspection Incomplete/Unqualified ☐	☐
Material ☐	☐	Use for Testing ☐	☐	Cuffs ☐	☐	Contamination ☐	☐
Internal Transport ☐	☐	Poor Information ☐	☐	Crushing ☐	☐	Countersink ☐	☐
Tribal Knowledge ☐	☐	Rushing ☐	☐	Heat Treat ☐	☐	Cut Too Short ☐	☐
LOA ☐	☐	Product Improvement ☐	☐	Wave/Twist in Tube ☐	☐	Instructions Incomplete/Unclear ☐	☐
Substation ☐	☐	Process Improvement ☐	☐	Marks/Chatter ☐	☐	Drill Holes ☐	☐
Past Expiry Date ☐	☐	Manufacturing Process ☐	☐	OTHER : _____			
Misidentified ☐	☐	Past Due ☐	☐				

Picklist Print

Tuesday, November 08, 2016 10:52:31 AM

Page 1

Work Order ID: 153109

153109

Parent Item: D4434-5

D4434-5

Parent Item Name: Bracket

Start Date: 11/15/2016

Required Date: 11/18/2016

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP Rev:A 12.03.06 per REV.B DD verified by:EC IPP
REV:B 13.04.01 AS PER D4434 REV.C DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6S.040		Purchased		No		100	sf	317.1300	0.45	1.894737			
M6061T6S 040									**		DAS		
6061-T6 .040 Sheet											46	16/11/17	
											9-89		

Location

Loc Qty

Loc Code

MAT021

317.13

m135147

1

m135612

39.61

m135632

103.7

m135724

172.82

4_____

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
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Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER :					

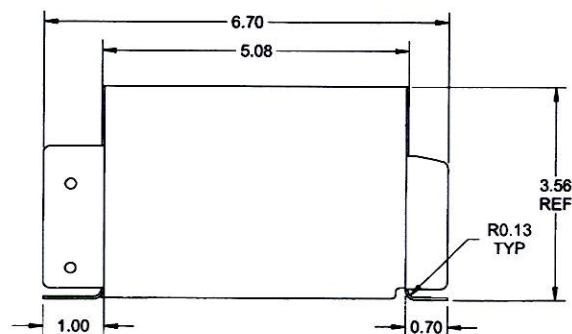
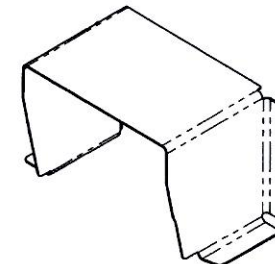
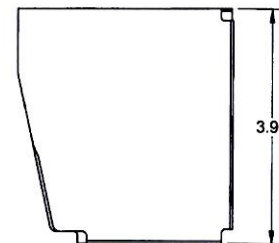
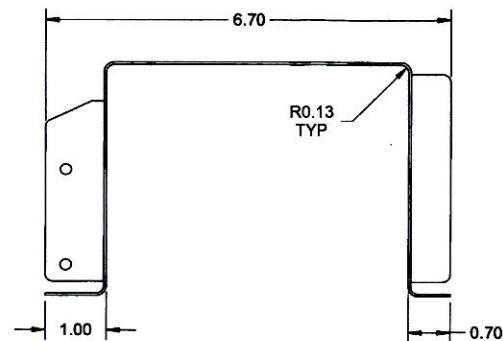
DART AEROSPACE LTD		Work Order:	153109
Description: Bracket		Part Number:	D4434-5
Inspection Dwg: D4434	Rev: C	Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.177	+0.005/-0.001	0.180	✓		Dk-02	
0.45	+/-0.030	0.452	✓		Tape	
1.14	+/-0.030	1.144	✓			
1.418	+/-0.010	1.419	✓			
3.018	+/-0.010					
3.75	+/-0.030	3.754	✓			
4.05	+/-0.030					
8.73	+/-0.030					
9.02	+/-0.030					
11.63	+/-0.030					
12.47	+/-0.030					
1.08	+/-0.030	1.09	✓			
1.427	+/-0.010	1.426	✓			
2.827	+/-0.010					
3.46	+/-0.030	3.464	✓			
4.46	+/-0.030	4.463	✓			
3.31	+/-0.030	3.31	✓			
11.57	+/-0.030					
0.10	+/-0.030					
0.30	+/-0.030	0.30	✓			
0.040	+/-0.010	0.040	✓			
1.600	+/-0.010	1.603	✓			
3.81	+/-0.030	3.816	✓			
4.16	+/-0.030	4.162	✓			
4.31	+/-0.030	4.313	✓			
9.59	+/-0.030	9.59	✓			
9.88	+/-0.030	9.88	✓			
13.35	+/-0.030	13.35	✓			
14.19	+/-0.030	14.19	✓			
10.74	+/-0.030	10.74	✓			

Measured by:	46 9-89	Audited by:	38 9-89	Preliminary Approval:	
Date:	16/11/17	Date:	NOV 18 2016	Date:	

Rev	Date	Change	Revised by	Approved
A	12.02.01	New Issue	KJ	
B	12.05.15	Dwg Rev updated	KJ	
C	14.04.14	Dwg Rev updated	KJ	



D4434-5 BRACKET

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 153109 MLJ
16-11-09

RELEASED
2014-03-31

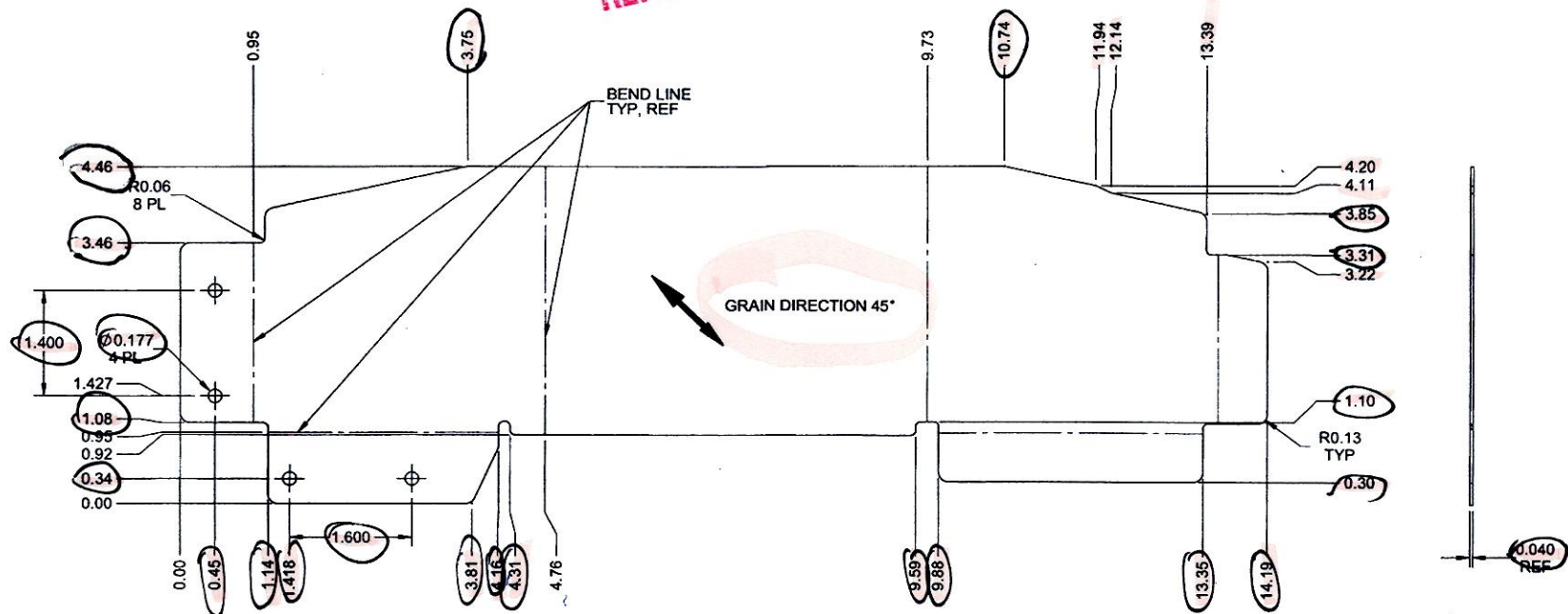
NOTES:

- 1) MATERIAL: MAKE FROM D4434-5F FLAT PATTERN
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.20 lbs

APPROVED

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	DC	DRAWING NO.	REV. C
MFG. APPR.	DD	D4434	SHEET 10 OF 15
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	COVER ASSEMBLY	NTS
DATE	14.03.06	COPYRIGHT © 2012 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

REFERENCE ONLY



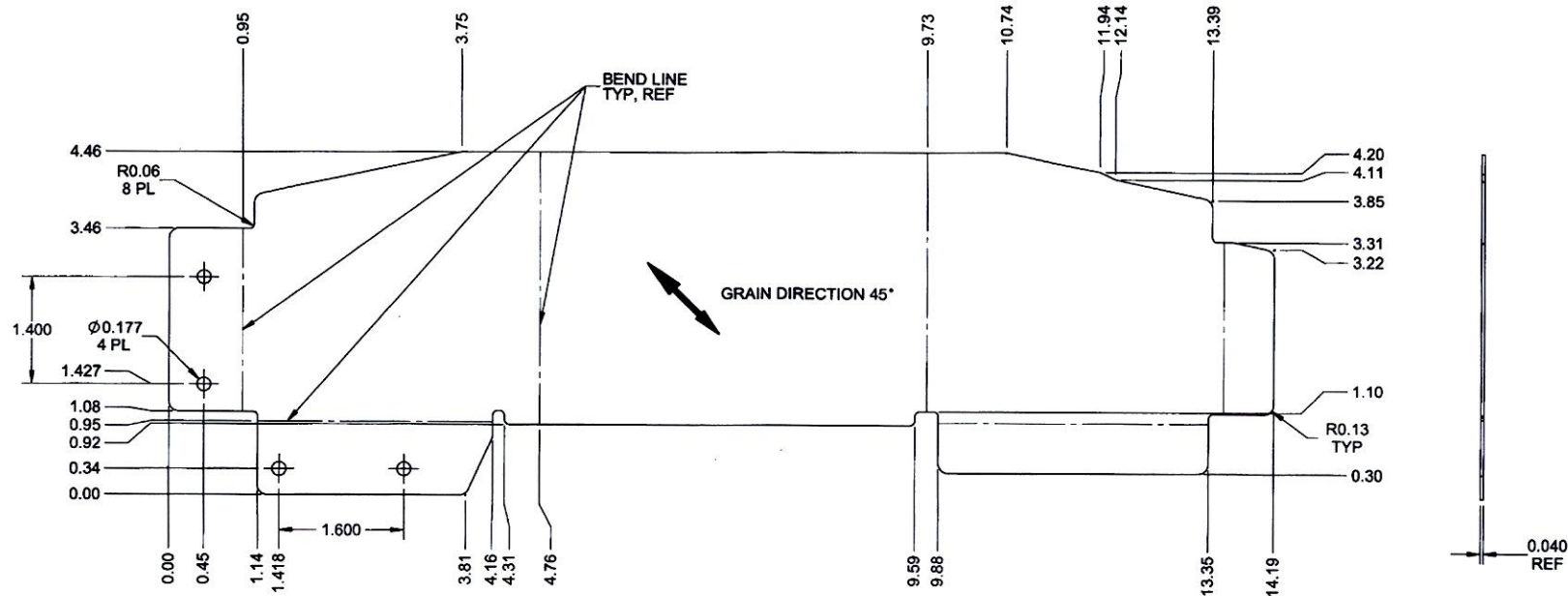
△ D4434-5F FLAT PATTERN

NOTES:

- 1) MATERIAL: 6061-T6/T62 ALUMINUM SHEET 0.040 THICK
PER QQ-A-250/11 OR AMS-QQ-A-250/11
OR AMS 4025 OR AMS 4027
OR ASTM B209
REF DART SPEC. M6061T6S.040
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
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RELEASED
2014-03-31

APPROVED	DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
	DRAWN	RF		
	CHECKED	DC	DRAWING NO. D4434	REV. C
	MFG. APPR.	DD	SHEET 11 OF 15	
	APPROVED	HS	TITLE	SCALE
	DE APPR.	DS	COVER ASSEMBLY	NTS
DATE		14.03.06	COPYRIGHT © 2012 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



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PER QQ-A-250/11 OR AMS-QQ-A-250/11
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2014-03-31

APPROVED	DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
	DRAWN	RF		
	CHECKED	DC	DRAWING NO.	REV. C
	MFG. APPR.	DD	D4434	SHEET 11 OF 15
	APPROVED	HS	TITLE	SCALE
	DE APPR.	DS	COVER ASSEMBLY	NTS

DATE 14.03.06

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